REMARKS

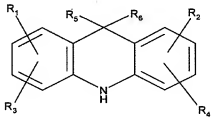
I. Status of the Claims

Claims 1, 5-9, 11-19 and 22 are pending in the application. Claims 1, 5-9, 11-19 and 22 stand rejected under 35 USC §103(a) over Wheeler (U.S. Pat. No. 5,268,394) in view of Deetman (RE37,101) in light of Downs et al. (U.S. Pat. No. 5,310,491). By this amendment, Claims 1, 11, 12 and 22 have been amended to specify nonylated acridans rather than butylated octylated compounds. No new matter has been added. Upon entry of this amendment, claims 1-20 and 38-42 will remain pending in this application.

II. Rejection of Claims 1, 5-9, 11-19 and 22 under 35 U.S.C. §103(a) as unpatentable over Wheeler in view of Deetman in light of Downs et al.

i. The process limitations of composition Claim 1 impart structure to the claimed composition and must be considered.

The invention of present Claim 1 is a composition comprising a lubricant and a mixture of antioxidants. The mixture is prepared by the partial condensation of an alkylated diphenylamine selected from the group consisting of mono-, di-, and tri-nonylated diphenylamine[1] with an aldehyde or ketone in the presence of an acidic catalyst to yield at least one acridan of the general formula:



wherein R_1, R_2, R_3, and R_4, are independently selected from the group consisting of hydrogen, and nonyl, provided that at least one of R_1, R_2, R_3, and R_4 is not hydrogen, and R_5 and R_6 are independently selected from the group consisting of C_1 to C_{20} hydrocarbyl and Hydrogen. Residual alkylated diphenylamine is not separated from the acridan product and

[1] A similar limitation is recited in dependent Claim 12, which depends from independent method Claim 11

remains in said mixture of antioxidants with the acridan. The mixture of antioxidants also comprises residual alkylated diphenylamine remaining after the partial condensation.

The Office has maintained that the process limitations of Claim 1 should not be considered for determining patentability since Claim 1 is in product-by-process form. Appellants disagree. In *In re Thorpe*, the Federal Circuit indicated:

> The patentability of a product does not depend on its method of production. If the product in a product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.

Id. (emphasis added). Appellants assert that, contrary to the Office's contention, the process limitations in Claim 1 impact the structure to the claimed combination of diphenyl amine and acridan compounds in the claimed composition, and hence must be considered for purposes of evaluating patentability. *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979); MPEP §2113 ("The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art . . . .").

Specifically, the language of Claim 1 (as well as independent Claims 11 and 22) unequivocally defines a relationship between the alkylated diphenylamine and the acridan that are contained in the mixture of antioxidants. The alkylated diphenylamine contained in the mixture must be structurally capable of forming the acridan.[2] For example, if a di-nonylated diphenylamine is the diphenyl amine, then the acridan formed therefrom must be a di-nonylated acridan. This structural relationship between the claimed combination of diphenyl amine and acridan compounds must be considered for purposes of determining patentability of composition Claims 1 and 5-9, as well as method claims 11-19 and 22, and cannot be disregarded.

[2] The mixture may also contain additional alkylated diphenylamines or other antioxidants as reflected by the use the open-ended transitional phrase "comprising."

ii. Neither Wheeler nor Deetman disclose or suggest a mixture of antioxidants containing the claimed combination of acridan and diphenyl amine.

Based on the foregoing analysis, in order to establish a *prima facie* case of obvious with respect to pending Claims 1, 5-9, 11-19 and 22, the Patent Office must demonstrate, *inter alia*, a prior art mixture containing: (i) an acridan compound of the claimed structure, and (ii) a diphenyl amine having a chemical structure capable of forming that acridan compound.

The Office relies on Deetman for allegedly teaching a butylated octylated diphenylamine as claimed in presents Claim 1, 5-9 and 12. The Office also relies upon Wheeler for allegedly disclosing an acridan compound falling within the scope of Claims 1, 5-9, 11-19 and 22.

As a preliminary manner, the claims have been amended to specify nonylated diphenylamines and nonylated acridans rather than butylated octylated diphenylamine, and for this reason the rejection should be withdrawn.

In addition, the Office's position disregards the above-described structural relationship required for the diphenyl amine and the acridan contained in the recited mixture of antioxidants of Claims 1, 5-9, 11-19 and 22. Applicants respectfully assert that neither Wheeler nor Deetman teaches or suggests an acridan compound that may be formed from the butylated octylated diphenyl amine allegedly disclosed in Deetman, e.g., an acridan compound of Claim 1 wherein R_1 and R_2 are butyl and/or octyl groups, and R_3, R_4, R_5, and R_6 are hydrogen. Further, neither Wheeler nor Deetman, separately or in combination, teaches or suggests the claimed combination of acridan and alkylated diphenyl amine required by independent Claims 1, 11 and 22, i.e., where the diphenyl amine is structurally capable of forming the acridan through the recited condensation reaction. For this reason, Appellants request the withdrawal of this rejection..

In rejecting Claims 11-19 and 22, the Patent Office has asserted that Deetman "teaches that the acridan and the alkylated diphenylamine may be used in combination ("mixtures thereof")." Appellants disagree with this characterization of Deetman. The cited paragraph from Deetman (beginning at Col. 9, line 33 and ending at Col. 10, line 22)

provides a laundry list of antioxidant additives. From this list, one skilled in the art would have no motivation or reasoning whatever for combining the acridan and diphenylamine recited in the pending claims. In fact, the only specific acridan disclosed in Deetman is 9,9'-dimethylacridan, in which R_1, R_2, R_3, and R_4 are all hydrogen, and R_5 and R_6 are methyl (see the above chemical structure). The presently claimed compositions and methods, however, expressly require that "at least one of R_1, R_2, R_3, and R_4 is not hydrogen". See Claims 1, 11 and 22 (emphasis added). Accordingly, Deetman fails to disclose that the claimed acridan and alkylated diphenylamine may be used in combination.

III. Conclusion

The above amendment and remarks establish the patentable nature of all the claims examined on the merits in the application. Notice of Allowance and passage to issue is therefore respectfully solicited.

Any fee due with this paper may be charged to Deposit Account 50-1710.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3858. All correspondence should continue to be directed to our below-listed address.

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